

Listing of the Claims:

1. (Previously Presented) A physiological monitoring system which comprises:

at least one sensor for detecting a biological signal, representative of a physiological characteristic of a monitor-wearing patient and generating an electrical signal representative of the biological signal;

5 at least one sensor for detecting physical activity of the patient and generating an electrical signal, representative of physical activity;

processing means, coupled to said sensors for processing said electrical signals;

10 an activity threshold detector coupled to said processing means for receiving said electrical signals representative of physical activity;

a user interface for communicating information about the detected biological signal to the patient;

15 means for adaptively controlling the communication of the information about the detected biological signal in accordance with a level of the sensed physical activity as determined by said activity threshold detector.

2. (Previously Presented) The system of claim 1, further comprising:

a means for programming said physical activity sensor for operational control at a selected threshold of physical activity.

3. (Previously Presented) The system of claim 1, wherein the biological signal sensor is adapted to sense cardiac signals.

4. (Previously Presented) The system of claim 1, wherein the biological signal sensor comprises:

electrocardiography electrodes that detect biological signals representative of the heart beats of the patient.

5. (Previously Presented) The system of claim 1, wherein the physical activity sensor comprises:

a transducer that detects chemical, electrical or mechanical characteristics of a monitor-wearing patient, representative of physical activity,
5 including vibrations, motion, acceleration, electromyographic impulses, or sound impulses.

6. (Previously Presented) The system of claim 1, wherein the physical activity sensor comprises:

an accelerometer, a pedometer, an electrical noise detector, electronic capacitive sensor, an electromyographic sensor, a skin impedance sensor, or a
5 piezoelectric sensor.

7. (Previously Presented) The system of claim 1, wherein the physical activity sensor is a passive transducer including a piezoelectric element.

8. (Previously Presented) The system of claim 1, further comprising:

a means for wireless transmission of information about the detected biological signal or system functions to a receiver external to the system.

9. (Previously Presented) The system of claim 1, wherein the at least one sensor comprises one or more electrocardiography electrodes that sense electrocardiography signals from the patient, whereby the electrocardiography and physical activity sensors generate electrical signals representative of each respective
5 biological signal;

wherein the processing means includes an arrhythmia threshold detector coupled to the electrocardiography sensor for receiving said electrical signals representative of the electrocardiography signals and determining whether the signals are below or above a preset threshold;

10 wherein the activity threshold detector is coupled with the activity sensor for receiving said electrical signals representative of the activity level of the patient and determining whether the signals are below or above a predetermined threshold;

15 further including a system error detector for detecting system errors and determining if the detected error meets pre-determined criteria; and

the means for adaptively controlling the communication includes a processor for controlling communication of system and biological signal information to the patient through the user interface based on (1) the level of the detected activity level relative to the predetermined threshold of said activity threshold detector, (2) 20 the electrocardiography signals relative to the pre-set threshold of said arrhythmia threshold detector, and/or (3) the detected system errors relative to the predetermined criteria of the system error detector.

10. (Previously Presented) The system of claim 9, wherein the user interface comprises:

an alarm circuit comprising acoustic, tactile, or visual modes of communicating information to the patient, and which mode is determined by 5 processor based on whether the signals from the respective detectors meet pre-determined thresholds.

11. (Previously Presented) The system of claim 9, wherein processor further comprises:

a calibration means for pre-setting the pre-set threshold of the arrhythmia threshold detector based on processing of electrocardiography signals 5 from the patient to generate a baseline of electrocardiography information.

12. (Previously Presented) The system of claim 9, further including:

5 a memory component, the processor saving the electrocardiography signals into the memory component such that electrode signals below the pre-set threshold of the arrhythmia threshold detector are overwritten and electrocardiography signals above the pre-set threshold are saved in the memory component.

13. (Previously Presented) The system of claim 9, wherein the physical activity sensor comprises:

a transducer that detects chemical, electrical or mechanical characteristics of a monitor-wearing patient, representative of physical activity.

14. (Cancelled)

15. (Previously Presented) The system of claim 9, wherein the physical activity sensor is a passive transducer including a piezoelectric element.

16. (Cancelled)

17. (Previously Presented) The system of claim 9, further comprising:

means of wireless communication to an external system, for communication of information about the patient and system state to the patient or to others.

18. (Withdrawn) A method for communicating information about a patient during ambulatory monitoring of a physiological condition of the patient comprising:

5 attaching a physiological monitoring system to a patient;
sensing one or more selected physiological parameters of the patient;

sensing a physical activity of the patient;

comparing the sensed physical activity to a pre-set threshold to determine whether the physical activity exceeds the pre-set threshold;

detecting a system error to be communicated to the patient and

10 determining whether the detected error meets pre-determined criteria;

generating an error signal based on the system error and transmitting the error signal to the patient via a user interface, if the physical activity of the patient exceeds the pre-set threshold.

19. (Withdrawn) The method of claim 18, wherein the step of detecting physical activity includes detecting pre-determined chemical, electrical or mechanical characteristics of the patient that are representative of physical activity, wherein the characteristics comprise vibrations, motion, acceleration, 5 electromyographic impulses, or sound impulses.

20. (Cancelled)

21. (Withdrawn) The method of claim 18, wherein the selected physiological parameter of the patient is sensed by at least one sensor comprising two or more electrocardiography electrodes that sense electrocardiography signals from the patient, whereby the sensor generates an electrical signal 5 representative of the selected physiological parameter.

22. (Withdrawn) The method of claim 18, wherein the physiological parameter includes electrocardiography signals and further including:

determining from the sensed electrocardiography signals whether an arrhythmic event has occurred;

5 from the sensed activity level, determining if the patient is active or at rest;

in response to determining that the patient is at rest, saving the arrhythmic event for later communicating arrhythmic events to the patient;

10 in response to determining that the patient is active, communicating the arrhythmic event information to the patient.

23. (Withdrawn) A method for communicating information about a patient during ambulatory monitoring of a physiological condition of the patient comprising the steps of:

- 5 | attaching a physiological monitoring system to a patient;
- detected a selected physiological parameter of the patient;
- sensing physical activity of the patient;
- comparing the detected physiological parameter with a first pre-determined criteria to determine a physiological state of the patient reflecting an alarm condition;
- 10 generating an alert signal if the physiological condition of the patient reflects an alarm condition;
- transmitting the alert signal to the patient , if the sensed physical activity of the patient indicates the patient is active and inhibiting the transmission of the alert signal if the sensed physical activity of the patient indicates that the patient is
- 15 at rest.

24. (Previously Presented) A physiological monitoring system comprising:

- 5 | at least one sensor for detecting a biological signal of a patient;
- at least one sensor for detecting physical activity of the patient;
- a processor coupled to the sensors, the processor including:
 - a biological signal processor for comparing the detected biological signal with biological signal threshold data and generating a biological signal alarm condition if the threshold is met, and
 - 10 an activity threshold detector for processing the electrical signals representative of physical activity to determine physical activity of the patient,

an adaptive communication controller which determines alarm states based on the biological signal alarm condition and the determined physical activity; and

15 a user interface controlled by the processor adaptive communication controller to produce at least two different types of alarms based on the biological signal alarm condition and the physical activity of the patient.

25. (Previously Presented) The physiological monitoring system of claim 24 further including:

 a system monitor which detects system malfunctions and classifies the detected malfunctions as critical or non-critical; and

5 wherein the user interface further bases the alarm type on the classification of any detected system malfunctions.

26. (Previously Presented) The physiological monitoring system of claim 24 wherein the processor determines from detected biological signal and the detected physical signal whether the patient is unconscious, and wherein the user interface sends an emergency response alarm signal to a remote third party responder in response to determining the patient is unconscious.

5 27. (Previously Presented) The system of claim 1 wherein the activity threshold detector determines when the patient is at rest or active, and further including:

 a means for determining when the information about the detected biological signal is urgent or non-urgent.

28. (Previously Presented) The system of claim 27 wherein the means for adaptively controlling the communication of the information further:

 in response to the information being urgent, communicates the information to the patient;

5 in response to the information being non-urgent and the patient being at rest, inhibits the communication of the information to the patient;

in response to the information being non-urgent and the patient being active, communicates the information to the patient.

29. (Previously Presented) The system of claim 27 further including:

a means for determining when the detected biological information signal is inconsistent with the level of physiological activity; and

5 wherein the means for adaptively controlling the information inhibits the communication of the information about the detailed biological signal when the means for determining when the detected biological information signal is inconsistent with the level of physiological activity determines that biological information signal is inconsistent with the level of physiological activity.

30. (Previously Presented) The system of claim 9 wherein the activity threshold detector determines when the patient is at least at rest and active, and wherein the processor determines when the information is at least urgent and non-urgent; and

5 wherein the processor adaptively communicates and inhibits the communication of the information in accordance with whether the patient is at rest or active and whether the information is urgent or non-urgent.

31. (Withdrawn) The method of claim 23 further including:
in response to the sensed physical activity of the patient indicating that the patient is unconscious, transmitting the alert signal to a third party responder to supply emergency help.

32. (Withdrawn) The method of claim 23 further including:
comparing the detected physiological parameter with a second
predetermined criteria indicative of a life-threatening physiological state;

5 indicative of a life-threatening physiological state, transmitting the alert signal to the
patient regardless of the sensed physiological activity of the patient.

33. (Withdrawn) The method of claim 32 further including:
in response to determining from the sensed physical activity that the
patient is engaged in normal waking activity inconsistent with the life-threatening
physiological state, inhibiting the transmission of the alert signal to the patient.

34. (Previously Presented) An apparatus for communicating
information about a patient during ambulatory monitoring of a physiological
condition of the patient comprising:

5 a physiological monitoring system for attachment to a patient;
means for detecting a selected physiological parameter of the patient
with the physiological monitoring system;
means for sensing physical activity of the patient;
means for comparing the detected physiological parameter with a first
pre-determined criteria to determine a physiological state of the patient reflecting an
10 alarm condition;
means for generating an alert signal if the physiological condition of
the patient reflects an alarm condition;
means for transmitting the alert signal to the patient if the sensed
physical activity of the patient indicates the patient is active and inhibiting the
15 transmission of the alert signal if the sensed physical activity of the patient indicates
that the patient is at rest.